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## **E-learning in higher education: the analysis of the Irish and Kazakhstan experience**

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### **Abstract**

The article describes the results of a PhD research internship at The Dublin Institute of Technology (DIT). The data were gathered as an element of the author's doctoral research. A series of interviews was carried out with the Institute's academic and learning support staff. Based on the interviews the experiences of e-learning in the DIT are analyzed here. The highlights of implementing a virtual learning environment and improving the ICT competencies of academic staff, employee' and students in the Irish higher education are examined in the article. The data analysis suggests certain differences between the Irish and Kazakhstan e-learning systems and possibilities for mutual learning. The main findings are presented and discussed.

**Key words:** informatisation of education; e-learning; information and communications technology; virtual learning environment; information education systems; ICT competency

### **1. Introduction**

At present one of the primary technologies in implementing lifelong learning is e-learning technology using a virtual learning environment (VLE). This article presents a comparative analysis of applying e-learning in higher education in Irish and Kazakhstan. The research was carried out to identify the characteristic features of the VLEs used and their advantages over traditional systems, the education and technologic resources required, and the best options for their use in the learning process.

### **2. Methodology and Results**

The data were gathered as an element of the author's doctoral research. As part of the doctoral thesis process the author completed an Internship at The Dublin Institute of Technology in the period from April 1<sup>st</sup> to 30<sup>th</sup>, 2016. During the internship academic and support staff whose work is directly related to e-learning were interviewed. Eight people were interviewed, including five staff of the e-learning department and three lecturers who teach web courses.

The research was conducted on the basis of specially designed questions for employees involved in the VLE and e-learning policy-making, management, implementation, teaching and support. The aim of the study was to study the use of a VLE in the learning process.

Interview questions were divided into four topical units as follows:

1. *Policy*. A topical unit aimed at studying the policy of implementing e-learning in higher education. The questions include the context of institutional policy, the VLE and e-learning development and implementation strategy, financial questions, the infrastructural and technical resources required, the development and implementation stages, the necessity of using a VLE by academic staff, the effective and ineffective aspects of policy.

2. *Teaching*. A topical unit aimed at studying the use of a VLE in teaching. The questions include preparing academic staff for using a VLE and e-learning, the results of using a VLE in teaching and the evidence that a VLE improves student performance, encouraging academic staff to use a VLE and e-learning, the new role of a lecturer in teaching, the most and least popular tools of the platform and e-learning among academic staff.

3. *Technology*. A topical unit aimed at studying the use of ICT in a lecturer's teaching activity. The questions include VLE technologies, technical support, minimal technologies necessary for students, the effectiveness of using a VLE and e-learning.

4. *Theory and philosophy*. A topical unit aimed at studying the advantages and disadvantages of using a VLE and e-learning. The questions here include preparation for using a VLE and e-learning, the benefits of using a VLE and e-learning, students' ICT competency, organising Master's degree programs in the area of e-learning.

As a result of the research the procedures for implementing a VLE and e-learning in Dublin Institute of Technology were identified and a comparative analysis with Kazakhstan universities completed.

### **3. Discussion**

#### *The Irish pattern of implementing e-learning*

The main document outlining trends in higher education in Ireland is the National Strategy for Higher Education to 2030. It was launched in 2011 and is aimed at changing the higher education sector in Ireland in the next two decades [1].

There are seven universities in Ireland and The Dublin Institute of Technology – soon to be designated as a University of Technology - fourteen Institutes of Technology and several private higher education providers. Most higher education providers are based on the classical model, i.e. they offer Bachelors, Masters and Doctoral programs in a wide variety of areas.

Research is actively carried out at the universities and Institutes. Research programs in biotechnology, optoelectronics, information technology and telecommunication are financed as part of “Advanced Technology Program”. The country’s government encourages the active use and development of a VLE and e-learning in every possible way. Much attention is paid to e-learning development in Ireland’s universities. The state finances the development of e-learning in the country’s higher education institutions.

The most widespread e-learning platforms in Irish universities are *WebCT*, *Blackboard*, *Moodle* and *Electronic Grade Book*. Half of the universities in Ireland use *Moodle* and about half use *Blackboard*. Initially they used the *WebCT* package in Dublin Institute of Technology. Today there are two functioning systems. *Blackboard* is for web courses to support the learning process. The second system is for the administrative management, i.e. for keeping the record of grades, timetables, etc. This system is called *Electronic Grade Book*, and does not have anything to do with Web courses.

At the moment the project to introduce a unified education system into all the universities of Ireland is being implemented. They are attempting to unite all the systems into one. There has been a survey on using a platform through the students’ personal accounts. These data will be taken into consideration in developing a unified education system that will suit administrative, managerial and educational needs. The policy in education informatization in Ireland is moving towards the introduction of cloud technologies into the education system, towards the increase of online materials and an active implementation of ICT in learning. Despite this the DIT lecturers are free to choose their own academic teaching methods. In other words, the lecturers do not have to switch to online learning. However the students themselves expect the lecturers to participate in the VLE; they encourage more and more lecturers to use the environment.

Thanks to the VLE, the lecturers can access all the information about their students. The Institute's technological infrastructure allows access to all the electronic sources in any DIT building. Amsterdam provides server hardware and hosting, and the administering is performed remotely. Thereby the university does not employ a lot of maintenance officers.

It should be noted that the lecturers' position in accepting the VLE was ambivalent. Initially the lecturers were concerned with the fact that the technology would replace their academic work roles, that learning would take place using the Internet, that a lecturer's role in teaching would be reduced to the minimum. However, it is now clear that the technology is the tool that they are using themselves. The lecturers are given complete freedom in choosing the teaching methods and technologies.

The level of the lecturers' ICT competency is of importance in developing e-learning. Universities conduct seminars to improve their lecturers' ICT competency. Much attention is paid to the development of e-learning methods and approaches to training. Electronic education resources (EER) and mobile applications are actively used in teaching; non-borrowed EER are being developed. The implementation of ICT in education is supported and the universities' ICT projects are financed by the state.

DIT lecturers are normally required to have not less than five years' experience in the field of their teaching. From the students' perspectives, changes are implemented in VLEs in order to make the training and learning more effective. Students actively use social networks in their training. Lecturers can choose a form of academic performance rating of their students. A distinctive feature of training Bachelors is the six- to nine-month internship in various companies and enterprises. The curriculum is changed every five years, and prospective employers participate in the process.

The Institute carries out regular reviews of the lecturers' and students' activity in using the tools of the functioning platform. They determine the effectiveness of using the platform according to the number of created modules and their popularity among the students. The most popular tools among the lecturers are syllabus upload, academic performance rating, quizzes, and plagiarism detection. The plagiarism detection tool is used in two modes: as a platform software tool and as an online service. The platform tools that the lecturers and

students use less are webinars, online training, wiki, and blogs. Every three years the Institute evaluates the performance capabilities and functions of the platform, and decides on what product to use next.

One of the issues considered important by the author of the research is training Master's Degree students in the area of ICT in the DIT. In particular, Master's Degree students majoring in e-learning are trained using modules. Examinations are replaced by projects in their area of research. Academic performance rating and assessment are maintained by a continuous two-year evaluation. Every module is evaluated in a separate way, be it an article, a presentation, or a small project.

A Master's Degree program gives Master's Degree students the opportunity to experience a wide scope of learning tools; the VLE is only one of them. It should be noted that the Master's Degree students majoring in e-learning are either the DIT lecturers or their other employees. The major has a specific feature. Before starting the module called Virtual Community Support, an online survey is conducted in order to identify the ICT competency level of each Master's Degree student. Groups then consist of Master's Degree students with different ICT competency levels. The Master's Degree program also includes Academic Writing and Publishing Modules.

#### **4. The Kazakhstan pattern of implementing e-learning**

Let us perform a comparative analysis of the Irish and Kazakhstan experience in implementing a VLE and e-learning in universities. In general terms the situation with e-learning in Kazakhstan universities is similar to the Irish one. Let us consider the aspects that differ significantly.

The main trends in developing education informatisation in the Republic are regulated by the following statutory framework: the Education Act of the Republic of Kazakhstan (RK), "Kazakhstan-2050" Strategy, the State Program for RK Education Development from 2011 to 2020, and the Education Informatisation Strategy to 2020.

During the 1990s the education informatisation was in its infancy. One could only talk about the computerisation of schools, and even then it was not common everywhere. In 1997 the informatisation process of the whole education system began on a national scale. The year 2001 was marked by a 100 per cent school computerisation. From 2005 to 2010 a new stage of education reform was implemented, including the sphere of education informatisation. In 2005 free Internet access became available in educational institutions of Kazakhstan. Classrooms began to be supplied with multimedia language laboratories in 2005 [2].

“E-learning” is one of the key trends in the State Program for Education Development from 2011 to 2020. In 2013 the state endorsed the “Informational Kazakhstan – 2020” State Program according to which the Unified National Scientific and Education Network (UNSEN) was introduced in the Republic. It is planned to create the *e-Learning* project at every level of education [3].

In Kazakhstan universities technical and server maintenance is conducted locally. There is a technical support department in every university, the main purpose of which is to organize, administer, co-ordinate, control and implement the smooth functioning and development of the software and hardware system. The financial aspect is covered by the universities’ budget funded by the state.

Every university is developing e-learning and introducing a VLE. Before 2012 the country’s universities used either ready-to-use foreign platforms or their own original developments. In 2012 all the Kazakhstan universities joined the Unified Higher Education Management System (UHEMS). It is designed to administer the learning processes, is integrated with the Ministry of Education and Science of the PK system, and is compulsory. The Ministry conducts a popularity analysis of certain tools in the previous platforms and introduces changes and additions to the UHEMS. Cloud technologies are only being implemented in certain universities in the Republic.

The universities pay much attention to using ICT in their educational activity. As for the lecturers’ academic freedom in choosing teaching methods and technologies, the example of Pavlodar State University can be considered uniform around the country. All the lecturers have to use the VLE, as it is directly connected with managing the learning process. The lecturers are able to access the timetable at any time, see the students’ progress in the subject they teach.

The students can see the grades given to them by the lecturers in the electronic record book. They also have the information about their timetable, study materials, etc..

Using the distance learning platform, the lecturers carry out online and offline teaching. The classes take place through a lecturer's and a student's personal accounts. The administration supports and encourages the lecturers' achievements in using ICT.

## **5. Comparisons between Ireland and Kazakhstan**

There are some differences between the Kazakhstan and Irish systems of higher education in training Masters. The Master's Degree program in Kazakhstan implies passing all the courses specified in the curriculum of a certain specialty. Once a year the Head of the Departments make changes in the training curriculum. They change or add elective courses at the beginning of an academic year. There is a one-year subject-oriented Master's program and a two-year research and education Master's program. A final examination is held at the end of each course. Master's Degree students participate in various projects only as an option. By the end of the second year a Master's Degree student is expected to defend a Master's thesis. 30% of their time is allotted for teaching and scientific research internships. During this time a Master's Degree student is supposed to give classes and carry out research in close contact with his/her advisor.

## **6. Conclusion**

The analysis between the Irish and Kazakhstan cases enabled the author to identify the main points that could be used as possible enhancements for the Kazakhstan system of higher education. They are:

- analysis of the VLE tools usage and up-grading the platform taking into account students' and lecturers' needs;
- introduction of cloud technologies on the national level;
- open access to lecturers' electronic education resources (EER) and video lectures;
- creating a unified EER and video lectures database for the universities around the country;
- lecturers' academic freedom in choosing teaching methods and technologies;
- adjusting a course in ICT subjects depending on students' ICT competency level.



The comparative analysis of the Irish and Kazakhstan experience in implementing e-learning conducted for this article is not exhaustive. The article is an attempt to cover only the main issues urgent for the doctoral research outputs concerned.

E-learning is one of the priority areas of the informatisation in all the universities around the world. The innovations connected with e-learning, indeed, require a high level of lecturers' ICT competency. In this regard an array of problems occurs due to the following reasons:

*first*, insufficient level of the lecturers' ICT competency

*second*, underdeveloped infrastructure

*third*, the lack of well-designed teaching and learning aids.

These issues will be considered more thoroughly and presented in a separate article in the immediate future.

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